

REMARKS/ARGUMENTS

Reconsideration of this application is requested. Claims 1-5, 7 and 9-21 are in the case.

I. SPECIFICATION

The Action notes a clerical error in the Abstract. This has been corrected.

II. CLAIM OBJECTIONS

Claim 1 and 4 have been objected to on formal grounds. These have been corrected by including a reference to a "second" proteinaceous material in claim 1, and deleting the units from the aspect ratio defined in claim 4. Withdrawal of the claim objections is respectfully requested.

III. THE 35 U.S.C. §112, SECOND PARAGRAPH, REJECTION

Claims 21 and 22 stand rejected under 35 U.S.C. §112, second paragraph, for the reasons stated on page 3 of the Action. Claim 21 has been amended to refer to claim 1, and claim 22 has been canceled without prejudice. Withdrawal of this rejection is respectfully requested.

IV. THE 35 U.S.C. §101 REJECTION

Claim 22 stands rejected under 35 U.S.C. §101 as directed to a use. Claim 22 has been canceled without prejudice. Withdrawal of this rejection is respectfully requested.

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V. THE ANTICIPATION REJECTION

Claims 1, 6, 12, 13, 16, 18 and 21 stand rejected under 35 U.S.C. §102(b) as allegedly anticipated by U.S. Patent 4,800,093 to Hogan. That rejection is respectfully traversed.

The invention as claimed provides a composition comprising fungal particles of a filamentous fungus and a second proteinaceous material, wherein the ratio of the weight on a dry matter basis of the proteinaceous material to the weight on a dry matter basis of the fungal particles in the composition is greater than 1. In addition, claim 1 requires that the proteinaceous material comprises a cereal protein. Basis for this feature appears in original claim 8, and claim 8 has been canceled without prejudice. As claim 8 was not rejected on anticipation grounds, it is clear that the anticipation rejection should now be withdrawn. Such action is respectfully requested.

VI. THE OBVIOUSNESS REJECTION

Claims 1-22 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. Patent 6,579,562 to Darke in view of Nigam (Nigam, P. 2000; "Mycelial Fungi"; Encyclopedia of Food Microbiology, Vols. 1-3; Robinson et al., Eds. Academic Press; pp. 2034-2044). The rejection is respectfully traversed.

As noted earlier, the claimed composition comprises (1) fungal particles of a filamentous fungus, (2) a second proteinaceous material, (3) a weight ratio of the weight of the proteinaceous material to the weight of the fungal particles of greater than 1 and (4) wherein the proteinaceous material comprises a cereal protein.

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Neither Darke nor Nigam, taken singly or in combination suggests the combination of filamentous fungus and second proteinaceous material at the weight ratio as claimed. The Action asserts (paragraph 22) that Darke discloses a "soluble protein" and suggests that this protein:

"...may be a fungal protein (col. 1 lines 41 to 45)."

However, in the invention as claimed, the composition comprises "fungal particles" of a "filamentous fungus" which is not suggested by Darke. The reference to "fungal protein" in Darke is **not** a suggestion to use fungal particles or a filamentous fungus as defined in claim 1 of the present application. A fungal protein may comprise a protein such as a yeast and/or may comprise a protein which is not filamentous.

Moreover, Darke requires the selected proteins to be "solubilised in said water" (column 1, line 47 to 49). There would have been no motivation for a skilled person to select fungal proteins from the wide range of potential proteins described at column 1, line 41 to 45, and there would have been no motivation for a skilled person to select "fungal particles of a filamentous fungus" solely in view of Darke's use of the generic term "fungal protein", given that Darke is concerned with solubilizing proteins in water.

Darke likewise does not suggest a ratio of the weight the proteinaceous material to the weight of the fungal particles of filamentous fungus of greater than 1, nor is there any suggestion of such features where the proteinaceous material comprises a cereal protein. The comment in the Action (paragraph 22) that Darke discloses a "soluble protein" is also not relevant since filamentous particles are not solubilised and/or dissolved to define a solution (Darke, column 1, line 46 to 48).

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The Action asserts (paragraph 22) that the invention in Darke "may comprise 0.5 to 3.5% fungal protein (based on amount reported for soya protein in example formulation)". However, Darke does not state that the amount of soya protein (1% to 5%) in the example formulation at column 2, lines 60 onwards can be extrapolated to all the other protein elements described at column 1, line 41.

The Action also suggests that the invention of Darke may comprise "about 30-50 wt% proteinaceous material". Darke does not disclose 30-50 wt% proteinaceous material at column 3, line 9. All that is disclosed is that the extruded chunks may be used in the formulation at a level of 30% to 50%. Those chunks include (according to column 3, line 11) "varying proportions of the following:

Soya protein

Soya fibre

Starch

Wheat gluten

Vegetable fat"

Darke, therefore, suggests nothing about the level of proteinaceous material.

There may be very low levels of protein and higher levels of other materials.

Furthermore, Darke suggest nothing about the amount of wheat gluten (an example of a cereal protein as recited in claim 1 of the present application). The chunks may include only 1% of wheat gluten.

Summarizing, Darke fails to disclose or suggest fungal particles of a filamentous fungus or a ratio as described in claim 1. Furthermore, no ratio equivalent to that defined in claim 1 can be determined from Darke. Darke could involve any ratio.

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The above-noted deficiencies of Darke are not cured by Nigam. Nigam contains no disclosure or suggestion of the weight ratio recited in claim 1. Since Darke also does not disclose or suggest such a ratio for the reasons discussed above, one of ordinary skill would not have been motivated to arrive at the presently claimed invention based on the combination of Darke and Nigam.

Darke (column 1, lines 41 to 45) states that "the protein elements in said brine are selected from the group consisting of plant proteins, animal proteins, vegetable proteins, cereal proteins, tuberous protein, fish protein, fungal protein and derivative and mixtures thereof". Thus, Darke discloses a very wide range of possible protein elements. There would have been no motivation for one of ordinary skill to select any one from any of the others. However, even if Darke and Nigam were combined (it is believed that one of ordinary skill would **not** have been motivated to combine Darke and Nigam), the claimed invention would not have resulted or have been rendered obvious thereby.

The present invention seeks to solve a problem associated with use of a cereal protein such as gluten in that it tends to form a sticky mass and as a result it can be difficult to combine the gluten with other ingredients, as described at page 2 lines 1 to 6 of the present application. Neither Darke nor Nigam recognizes this problem and neither provides a solution, nor provides any motivation for a skilled person to adopt the solution as claimed.

As described at page 10 lines 11 to 15 of the present application, the use of fungal particles as described in claim 1 may enable a range of other components to be contacted, for example mixed with, cereal protein more easily and over a greater time

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period compared to a case wherein no filamentous particles are used. This fact is illustrated in the examples. For example at page 13, line 2 et seq which refers to table 2, it is noted surprisingly "that the addition of mycoprotein to gluten increases the amount of time required for the gluten to develop defined texture...". None of the cited prior art appreciates how a filamentous fungus such as mycoprotein can be used together with the cereal protein gluten. Furthermore, page 14, line 6 of the present application recognizes that,

"....even at low levels of mycoprotein paste, there is an appreciable reduction in, for example, the toughness and resistance to extension of the doughs. It appears that the added fungus is able to interfere with the mechanism by which gluten texture develops".

None of the cited prior art recognizes this.

At page 14, line 16, it is stated:

"As a consequence of the observation of the effect of fungus on gluten, it has been found to be possible to blend into a mixture of fungus/gluten (representing a continuous phase) other ingredients including dry powders (as a dispersed phase). This would otherwise be extremely difficult if gluten texture developed very rapidly as it normally does".

Thus, faced with the problem with which the present invention is concerned, namely facilitating the blending of a cereal protein such as gluten with other ingredients, one of ordinary skill would not have been motivated to arrive at the present invention as claimed since none of the prior art recognizes the problem or solves it. In accordance with present invention, however, the problem is solved in a non-obvious way by the features described in claim 1.

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The reasoning presented in the Action in paragraph 27 is believed to be in error.

The Action asserts that

"However, the amount of wheat gluten (proteinaceous material) is much higher than the amount of fungal protein reported, indicating that the ratio of the proteinaceous material to fungal protein would likely fall in the range as claimed by applicants".

However, as discussed above, Darke does not disclose the level of "wheat gluten" at column 3. It solely discloses that 30% to 50% of an "extrude chunk" may be used. This does not amount to any information as regards the amount of wheat gluten.

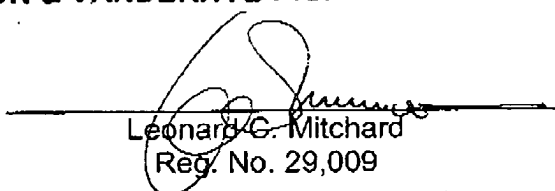
It is clear that the cited prior art fails to give rise to a *prima facie* case of obviousness. Withdrawal of the obviousness rejection is respectfully requested.

Favorable action is awaited.

Respectfully submitted,

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